

SENATE BILL 827

By Finney R.

AN ACT to amend Tennessee Code Annotated, Title 47,
Chapter 25, relative to efficiency standards for
certain products.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THIS STATE OF TENNESSEE:

SECTION 1. Tennessee Code Annotated, Title 47, Chapter 25, is amended by adding
the following language as a new part thereto:

Section 47-25-1901. The legislature finds that:

(a) Efficiency standards for certain products sold or installed in this state
assure consumers and businesses that such products meet minimum efficiency
performance levels and will reduce utility costs;

(b) Efficiency standards save energy resulting in a reduction of pollution
and other environmental impacts associated with the production, distribution, and
use of electricity, natural gas, and oil;

(c) Efficiency standards can make electricity systems more reliable by
reducing the strain on the electricity grid during peak demand periods and can
reduce or delay the need for new power plants, power transmission lines, and
power distribution system upgrades through energy conservation; and

(d) Energy efficiency standards contribute to the economy of this state by
helping to better balance energy supply and demand. A better balance in supply
and demand will reduce pressure on natural gas and electricity supplies and
lower energy prices freeing money that would be spent on energy costs to be
spent on local goods and services.

Section 47-25-1902. As used in this part:

(a) “Ballast” means a device used with an electric discharge lamp to obtain necessary circuit conditions, including voltage, current and waveform, for starting and operating the lamp;

(b) “Bottle-type water dispenser” means a water dispenser that uses a bottle or reservoir as the source of potable water;

(c) “Commissioner” means the commissioner of commerce and insurance;

(d) “Commercial hot food holding cabinet” means a heated, fully-enclosed compartment with one or more solid or glass doors that is designed to maintain the temperature of hot food that has been cooked in a separate appliance.

“Commercial hot food holding cabinet” does not include heated glass merchandizing cabinets, drawer warmers, or cook-and-hold appliances;

(e) “Compact audio product” means an integrated audio system encased in a single housing that includes an amplifier and radio tuner, attached or separable speakers, and can reproduce audio from one (1) or more of the following media:

(1) Magnetic tape,

(2) CD,

(3) DVD, or

(4) Flash memory.

“Compact audio product” does not include products that can be independently powered by internal batteries, that have a powered external satellite antenna, or that can provide a video output signal;

(f) “Compensation” means money or any other valuable thing, regardless of form, received or to be received by a person for services rendered;

(g) “DVD” means a laser-encoded plastic medium capable of storing a large amount of digital audio, video, and computer data;

(h) “DVD player” means a commercially-available electronic product encased in a single housing that includes an integral power supply and for which the sole purpose is the decoding of digitized video signal on a DVD;

(i) “DVD recorder” means a commercially-available electronic product encased in a single housing that includes an integral power supply and for which the sole purpose is the production or recording of digitized video signal on a DVD. “DVD recorder” does not include models that have an electronic programming guide function that provides an interactive, onscreen menu of television listings and that downloads program information from the vertical blanking interval of a regular television signal;

(i) “Electricity ratio” is the ratio of furnace electricity use to total furnace energy use. Electricity ratio = $(3.412 \cdot E[AE]) / (1000 \cdot E[F] + 3.412 \cdot E[AE])$ where E[AE] (average annual auxiliary electrical consumption) and E[F] (average annual fuel energy consumption) are defined in Appendix N to subpart B of part 430 of Title 10 of the Code of Federal Regulations and E[F] is expressed in millions of BTUs per year;

(j) “High-intensity discharge lamp” means a lamp produces light by the passage of an electric current through a vapor or gas and in which the light-producing arc is stabilized by bulb wall temperature and the arc tube has a bulb wall loading in excess of three (3) watts per square centimeter;

(k) “Medium voltage dry-type distribution transformer” means a transformer that:

(1) Has an input voltage of more than six hundred (600) volts but less than or equal to thirty-four thousand five hundred (34,500) volts;

(2) Is air-cooled;

(3) Does not use oil as a coolant; and

(4) Is rated for operation at a frequency of sixty (60) Hertz;

(l) "Metal halide lamp" means a high intensity discharge lamp in which the major portion of the light is produced by radiation of metal halides and their products of dissociation, possibly in combination with metallic vapors;

(m) "Metal halide lamp fixture" means a light fixture designed to be operated with a metal halide lamp and a ballast for a metal halide lamp;

(n) "Portable electric spa" means a factory-built electric spa or hot tub, supplied with equipment for heating and circulating water;

(o) "Probe-start metal halide ballast" means a ballast used to operate metal halide lamps that starts lamps by using a third starting electrode probe in an arc tube and does not contain an igniter;

(p) "Residential boiler" means a self-contained low-pressure appliance for supplying steam or hot water that is primarily designed for space heating; uses natural gas, propane, or home heating oil; and has a heat input rate of less than three hundred thousand (300,000) BTU per hour;

(q) "Residential furnace" means a self-contained space heater designed to supply heated air through ducts of more than ten (10) inches in length; utilizes only single-phase electric current or utilizes single-phase electric current or DC current in conjunction with natural gas, propane, or home heating oil; and

(1) Is designed to be the principal heating source for the living space of one (1) or more residences;

(2) Is not contained within the same cabinet with a central air conditioner whose rated cooling capacity is above sixty-five thousand (65,000) BTU per hour; and

(3) Has a heat input rate of less than two hundred twenty-five thousand (225,000) BTU per hour;

(r) “Residential pool pump” means a pump used to circulate and filter residential swimming pool water in order to maintain clarity and sanitation;

(s) “Single-voltage external AC to DC power supply” means a device that:

(1) Is designed to convert line voltage AC input into lower voltage DC output;

(2) Is able to convert to only one DC output voltage at a time;

(3) Is sold with, or intended to be used with, a separate end-use product that constitutes the primary power load;

(4) Is contained within a separate physical enclosure from such end-use product;

(5) Is connected to such end-use product via a removable or hard-wired male/female electrical connection, cable, cord or other wiring;

(6) Does not have batteries or battery packs, including those that are removable, that physically attach directly to the power supply unit;

(7) Does not have a battery chemistry or type selector switch and indicator light; or does not have a battery chemistry or type selector switch and a state of charge meter; and

(8) Has a nameplate output power less than or equal to two hundred fifty (250) watts;

(t) "State-regulated incandescent reflector lamp" means a lamp that is not colored and is not designed for rough or vibration service applications that:

- (1) Has an inner reflective coating on the outer bulb to direct the light;
- (2) Has an E26 medium screw base;
- (3) Has a rated voltage or voltage range that lies at least partially within one hundred fifteen (115) to one hundred thirty (130) volts; and
- (4) Falls into either of the following bulb shape categories:
 - (A) Blown PAR (BPAR), bulged reflector (BR), elliptical reflector (ER) or similar bulb shape with a diameter equal to or greater than two and one-quarter (2.25) inches; or
 - (B) Reflector (R), parabolic aluminized reflector (PAR) or similar bulb shape with a diameter of two and one-quarter (2.25) to two and three-quarter (2.75) inches;

(u) "Temperature reset" means an automatic method for adjusting the temperature of the water supplied by a residential boiler such that an incremental change in inferred heat load produces a corresponding incremental change in supply water temperature. When there is no inferred heat load, such automatic method adjusts the supply water temperature to no more than one hundred forty (140) degrees Fahrenheit;

(v) "Transformer" means a device consisting of two (2) or more coils of insulated wire that is designed to transfer alternating current by electromagnetic induction from one (1) coil to another to change the original voltage or current value. "Transformer" does not include devices:

(1) With multiple voltage taps, with the highest voltage tap equaling at least twenty (20) percent more than the lowest voltage tap; or

(2) That are designed to be used in a special purpose application and are unlikely to be used in general purpose applications including, but not limited to, drive transformers, rectifier transformers, auto-transformers, Uninterruptible Power System transformers, impedance transformers, regulating transformers, sealed and non-ventilating transformers, machine tool transformers, welding transformers, grounding transformers, and testing transformers;

(w) "Walk-in refrigerator" means a space designed for the storage or marketing of food, beverages or ice refrigerated to temperatures at or above thirty-two (32) degrees Fahrenheit that can be walked into;

(x) "Walk-in freezer" means a space designed for the storage or marketing of food, beverages or ice refrigerated to temperatures below thirty-two (32) degrees Fahrenheit that can be walked into; and

(x) "Water dispenser" means a factory-made assembly that mechanically cools and heats potable water and that dispenses the cooled or heated water by integral or remote methods.

Section 47-25-1903.

(a) The provisions of this part apply to the following types of new products sold, offered for sale, or installed in this state:

- (1) Bottle-type water dispensers;
- (2) Commercial hot food holding cabinets;
- (3) Compact audio products;
- (4) DVD players;

- (5) DVD recorders;
 - (5) Medium voltage dry-type distribution transformers;
 - (6) Metal halide lamp fixtures;
 - (7) Portable electric spas;
 - (8) Residential furnaces and residential boilers;
 - (9) Residential pool pumps;
 - (10) Single-voltage external AC to DC power supplies;
 - (11) State-regulated incandescent reflector lamps;
 - (12) Walk-in refrigerators;
 - (13) Walk-in freezers; and
 - (14) Any other products as may be designated by the commissioner in accordance with Section 47-25-1906.
- (b) The provisions of this part do not apply to:
- (1) New products manufactured in this state but sold outside this state;
 - (2) New products manufactured outside this state and sold at wholesale inside this state for final retail sale and installation outside this state;
 - (3) Products installed in mobile manufactured homes at the time of construction; and
 - (4) Products designed expressly for installation and use in recreational vehicles.

Section 47-25-1904.

- (a) Not later than one (1) year after the date of enactment of this part, the commissioner shall adopt rules, in accordance with the provisions of the Uniform

Administrative Procedures Act compiled in title 4, chapter 5, establishing minimum efficiency standards for the types of new products set forth in Section 47-25-1903.

(b) The rules shall provide for the following minimum efficiency standards:

(1) No bottle-type water dispensers designed for dispensing both hot and cold water shall have standby energy consumption greater than one and two-tenths (1.2) kilowatt-hours per day, as measured in accordance with the test criteria contained in version 1.1 of the U.S. Environmental Protection Agency's "Energy Star Program Requirements for Bottled Water Coolers," provided that no unit with an integral, automatic timer shall be tested using Section D, "Timer Usage," of the test criteria;

(2) Commercial hot food holding cabinets shall have a maximum idle energy rate of forty (40) watts per cubic foot of interior volume, as determined by the "idle energy rate-dry test" in ASTM F2140-01, "Standard Test Method for Performance of Hot Food Holding Cabinets" published by ASTM International. Interior volume shall be measured in accordance with the method shown in the U.S. Environmental Protection Agency's "Energy Star Program Requirements for Commercial Hot Food Holding Cabinets" as in effect on August 15, 2003;

(3) No compact audio product with a permanently illuminated clock display shall use more than four (4) watts in stand-by passive mode and no compact audio product without a permanently illuminated clock display shall use more than two (2) watts in stand-by passive mode, as measured in accordance with International Electrotechnical Commission

(IEC) test method 62087:2002(E), "Methods of measurement for the power consumption of audio, video, and related equipment;"

(4) DVD players and DVD recorders shall not use more than three (3) watts in standby-passive mode, as measured in accordance with International Electrotechnical Commission (IEC) test method 62087:2002(E), "Methods of measurement for the power consumption of audio, video, and related equipment;"

(5) Medium voltage dry-type distribution transformers shall meet minimum efficiency levels three-tenths (0.3) of a percentage point higher than the Class 1 efficiency levels for medium voltage distribution transformers specified in Table 4-2 of the "Guide for Determining Energy Efficiency for Distribution Transformers" published by the National Electrical Manufacturers Association (NEMA Standard TP-1-2002);

(6) Metal halide lamp fixtures designed to be operated with lamps rated greater than or equal to one hundred fifty (150) watts but less than or equal to five hundred (500) watts shall not contain a probe-start metal halide ballast;

(7) Portable electric spas shall not have a standby power greater than $5(V^n)$ Watts, as measured in accordance with the test method for portable electric spas contained in section 1604, title 20, California Code of Regulations. For purposes of this subdivision, "V" means total volume in gallons and "n" means to the two-thirds ($\frac{2}{3}$) power;

(8)

(A) Residential furnaces and residential boilers shall comply with the following Annual Fuel Utilization Efficiency (AFUE), electricity ratio and design requirements:

Product Type	Minimum AFUE	Maximum Electricity Ratio	Design Requirements
Natural gas- and propane-fired furnaces	90%	2.0%	None
Oil-fired furnaces \geq 94,000 BTU/hour in capacity	83%	2.0%	None
Oil-fired furnaces $<$ 94,000 BTU/hour in capacity	83%	2.3%	None
Natural gas- and propane-fired hot water residential boilers	82%	Not applicable	No standing pilot Temperature reset required
Natural gas- and propane-fired steam residential boilers	80%	Not applicable	No standing pilot
Oil-fired hot water residential boilers	84%	Not applicable	Temperature reset required
Oil-fired steam residential boilers	82%	Not applicable	none

Residential boilers shall only be operable if the temperature reset is installed. AFUE shall be measured in accordance with the federal test method for measuring the energy consumption of furnaces and boilers contained in Appendix N to subpart B of part 430, title 10, Code of Federal Regulations;

(B) The commissioner may adopt rules to exempt compliance with the forgoing residential furnace or residential boiler AFUE standards at any building, site or location where complying with such standards would be in conflict with any local zoning ordinance, building or plumbing code, or other rule

regarding installation and venting of residential furnaces or residential boilers.

(9)

(A) Residential pool pump motors may not be split-phase or capacitor start induction run type motors.

(B) Pool pump motors with a capacity of one (1) horsepower or more shall have the capability of operating at two (2) or more speeds with a low speed having a rotation rate that is no more than one-half ($\frac{1}{2}$) of the motor's maximum rotation rate. Pool pump motor controls shall have the capability of operating the pool pump at least two (2) speeds. The default circulation speed shall be the lowest speed, with a high speed override capability being for a temporary period not to exceed one normal cycle.

(10) Single-voltage external AC to DC power supplies shall meet the energy efficiency requirements in the following table:

Nameplate Output Power	Minimum Efficiency in Active Mode
0 to <1 watt	0.49* Nameplate Output
≥ 1 watt and ≤ 49 watts	$0.09 * \text{LN (Nameplate Output Power)} + 0.49$
>49 watts	0.84
	Maximum Energy Consumption in No-Load Mode
0 to <10 watts	0.5 watts
≥ 10 watts and ≤ 250 watts	0.75 watts
Where LN (Nameplate Output) = Natural Logarithm of the nameplate output expressed in watts	

(A) This standard applies to single voltage AC to DC power supplies that are sold individually and to those that are sold as a component of or in conjunction with another product;

(B) Single voltage external AC to DC power supplies that require U.S. Food and Drug Administration listing and approval as a medical device are exempt from the requirements of this section;

(C) Single voltage external AC to DC power supplies made available by a manufacturer directly to a consumer or to a service or repair facility after and separate from the original sale of the product requiring the power supply as a service part or spare part shall not be required to meet the standards of this section until January 1, 2013;

(D) For purposes of this paragraph, the efficiency of single-voltage external AC to DC power supplies shall be measured in accordance with the test methodology specified by the U.S. Environmental Protection Agency's Energy Star Program, "Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies (August 11, 2004)" provided that tests shall be conducted at one hundred fifteen (115) volts only;

(11)

(A) State-regulated incandescent reflector lamps shall meet the minimum average lamp efficacy requirements for federally-regulated incandescent reflector lamps contained in 42 U.S.C. Section 6295 (i)(1)(A);

(B) The following types of incandescent reflector lamps are exempt from these requirements:

(i) Lamps rated at fifty (50) watts or less of the following types: BR30, ER30, BR40, and ER40;

(ii) Lamps rated at sixty-five (65) watts of the following types: BR30, BR40, and ER40; and

(iii) R20 lamps of forty-five (45) watts or less;

(12) Walk-in refrigerators and walk-in freezers shall:

(A) Have automatic door closers that firmly close all reach-in doors and firmly close all walk-in doors that have been closed to within one (1) inch of full closure; provided that this requirement does not apply to walk-in doors wider than three (3) feet nine (9) inches or higher than six (6) feet eleven (11) inches;

(B) Contain wall, ceiling and door insulation of at least R-28 for coolers and R-32 for freezers. Door insulation requirements do not apply to glazed portions of doors or to structural members;

(C) Contain floor insulation of at least R-28 for freezers;

(D) Use electronically commutated motors for single-phase evaporator fan motors of under one (1) horsepower and less than four hundred sixty (460) volts. This requirement takes effect January 1, 2009, unless, prior to this date, the commissioner determines that such motors are only available from one (1) manufacturer. The commissioner may also allow other types of motors if the commissioner determines that, on average, these other motors use no more energy in evaporator fan applications than electronically commutated motors;

(E) For condenser fan motors of under one (1) horsepower, use either:

- (i) Electronically commutated motors,
- (ii) Permanent split capacitor-type motors, or
- (iii) Polyphase motors of one-half ($\frac{1}{2}$) horsepower or more; and

(F) For all interior lights, use light sources with an efficacy of forty-five (45) lumens per watt or more, including ballast losses, if any. Light sources with an efficacy of forty-five (45) lumens per watt or less, including ballast losses, if any, may be used in conjunction with a timer or device that turns off the lights within fifteen (15) minutes of when the walk-in is not occupied. LED light sources are exempted from the efficacy requirement until January 1, 2010;

(13) Walk-in refrigerators and walk-in freezers with transparent reach-in doors shall meet the following specifications in addition to the requirements of subdivision (12):

(A) Transparent reach-in doors and windows in walk-in doors for walk-in freezers shall be of triple-pane glass with either heat-reflective treated glass or gas fill;

(B) Transparent reach-in doors for walk-in coolers and windows in walk-in doors shall be either:

- (i) Double-pane glass with heat-reflective treated glass and gas fill or

(ii) Triple pane glass with either heat reflective treated glass or gas fill;

(C) If the appliance has an anti-sweat heater without anti-sweat heat controls, then the appliance shall have a total door rail, glass, and frame heater power draw of no more than seven and one-tenth (7.1) watts per square foot of door opening for freezers and three (3) watts per square foot of door opening for coolers; and

(D) If the appliance has an anti-sweat heater with anti-sweat heat controls, and the total door rail, glass, and frame heater power draw is more than seven and one-tenth (7.1) watts per square foot of door opening for freezers and three (3) watts per square foot of door opening for coolers, then the anti-sweat heat controls shall reduce the energy use of the anti-sweat heater in an amount corresponding to the relative humidity in the air outside the door or to the condensation on the inner glass pane.

Section 47-25-1905.

(a)

(1) On or after January 1, 2008, no new bottle-type water dispenser, commercial hot food holding cabinet, compact audio product, DVD player, DVD recorder, medium voltage dry-type distribution transformer, metal halide lamp fixture, residential pool pump, portable electric spa, state-regulated incandescent reflector lamp, single-voltage external AC to DC power supply, walk-in refrigerator, or walk-in freezer may be sold or offered for sale in this state unless the efficiency of the

new product meets or exceeds the efficiency standards set forth in the rules adopted pursuant to Section 47-25-1904.

(2) Notwithstanding the provisions of subdivision (1), residential pool pumps that do not meet the efficiency standards contained in subdivision (b)(9)(B) of Section 47-25-1904 may be sold in this state until January 1, 2010.

(b) No later than six (6) months after the date of enactment of this part, the commissioner, in consultation with the attorney general and reporter, shall determine if implementation of state standards for residential furnaces and residential boilers require a waiver from federal preemption. If the commissioner determines that a waiver from federal preemption is not needed, then on or after January 1, 2008, or the date which is one (1) year after the date of said determination, if later, no new residential furnace or residential boiler may be sold or offered for sale in this state unless the efficiency of the new product meets or exceeds the efficiency standards set forth in the rules adopted pursuant to Section 47-25-1904. If the commissioner determines that a waiver from federal preemption is required, then the commissioner shall apply for such waiver within one (1) year of such determination and upon approval of such waiver application, the applicable state standards shall go into effect at the earliest date permitted by federal law.

(c) One (1) year after the date upon which the sale or offering for sale of certain products becomes subject to the requirements of paragraph (a) or (b) of this section, no such products may be installed for compensation in this state unless the efficiency of the new product meets or exceeds the efficiency standards set forth in the rules adopted pursuant to Section 47-25-1904.

Section 47-25-1906.

Following the promulgation of rules pursuant to Section 47-25-1904, the commissioner may thereafter adopt rules, in accordance with the provisions of the Uniform Administrative Procedures Act compiled in title 4, chapter 5, establishing increased efficiency standards for the products listed in Section 47-25-1903. The commissioner may also establish standards for products not specifically listed in Section 47-25-1903. In considering such new or amended standards, the commissioner shall set efficiency standards upon a determination that increased efficiency standards would serve to promote energy conservation in this state and would be cost-effective for consumers who purchase and use such new products, provided that no new or increased efficiency standards shall become effective within one (1) year following the adoption of any amended rules establishing such increased efficiency standards. The commissioner may apply for a waiver of federal preemption in accordance with federal procedures (42 U.S.C. Section 6297 (d)) for state efficiency standards for any product regulated by the federal government.

Section 47-25-1907.

(a) The manufacturers of products covered by this part shall test samples of their products in accordance with the test procedures adopted pursuant to this part or those specified in locally adopted building codes. The commissioner shall adopt by rule test procedures for determining the energy efficiency of the products covered by Section 47-25-1903 if such procedures are not provided for in Section 47-25-1904 of this part or in locally adopted building codes. The commissioner shall adopt U.S. Department of Energy approved test methods, or in the absence of such test methods, other appropriate nationally recognized test

methods. The commissioner may adopt updated test methods when new versions of test procedures become available.

(b) Manufacturers of new products covered by Section 47-25-1903, except for single voltage external AC to DC power supplies, walk-in refrigerators, and walk-in freezers, shall certify to the commissioner that such products are in compliance with the provisions of this part. Such certifications shall be based on test results. The commissioner shall promulgate rules governing the certification of such products and shall coordinate with the certification programs of other states and federal agencies with similar standards.

(c) Manufacturers of new products covered by Section 47-25-1903 shall identify each product offered for sale or installation in this state as in compliance with the provisions of this part by means of a mark, label, or tag on the product and packaging at the time of sale or installation. The commissioner shall promulgate rules governing the identification of such products and packaging, which shall be coordinated to the greatest practical extent with the labeling programs of other states and federal agencies with equivalent efficiency standards. The commissioner shall allow the use of existing marks, labels, or tags which connote compliance with the efficiency requirements of this part.

(d) The commissioner may test products covered by Section 47-25-1903. If products so tested are found not to be in compliance with the minimum efficiency standards established under Section 47-25-1904, the commissioner shall:

(1) Charge the manufacturer of such product for the cost of product purchase and testing; and

(2) Make information available to the public on products found not to be in compliance with the standards.

(e) With prior notice and at reasonable and convenient hours, the commissioner may cause periodic inspections to be made of distributors or retailers of new products covered by Section 47-25-1903 in order to determine compliance with the provisions of this part. The commissioner shall also coordinate with the local building codes enforcement agency regarding inspections prior to occupancy of newly constructed buildings containing new products that are also covered by the locally adopted building code.

(f) The commissioner shall investigate complaints received concerning violations of this part and shall report the results of such investigations to the attorney general and reporter. The attorney general and reporter may institute proceedings to enforce the provisions of this part. Any manufacturer, distributor, or retailer, or any person who installs a product covered by this part for compensation, who violates any provision of this part shall be issued a warning by the commissioner for any first violation. Repeat violations shall be subject to a civil penalty of not more than two hundred fifty dollars (\$250). Each violation shall constitute a separate offense, and each day that such violation continues shall constitute a separate offense. Penalties assessed under this paragraph are in addition to costs assessed under paragraph (d) of this section.

(g) The commissioner may adopt such further rules as necessary to insure the proper implementation and enforcement of the provisions of this part.

SECTION 2. If any provision of this act or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of the

act which can be given effect without the invalid provision or application, and to that end the provisions of this act are declared to be severable.

SECTION 3. This act shall take effect upon becoming a law, the public welfare requiring it.